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Elementary School Students' Spoken Activities and their Responses in Math Learning by Peer-Tutoring

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Students' activities in the learning process are very important to indicate the quality of learning process. One of which is spoken activity. This study was intended to analyze the elementary school students' spoken activities and their responses in joining Math learning process by peer-tutoring. Descriptive qualitative design was piloted by means of implementing the qualitative approach and case study. Further, the data were collected from observation, field note, interview, and questionnaire that were administered to 24 fifth-graders of First State Elementary School of Kunjang, Kediri, East Java Indonesia. The design was that four students were recruited as the tutors; while the rest was subdivided into four different groups. The data taken from the observation and questionnaire were analyzed descriptively which were later categorized into various categories starting from poor category to the excellent one. The data collected from the interview were analyzed through the interactive model, data reduction, data exposing, and summation. The findings exhibited that the tutors' spoken activities covering: questioning, answering, explaining, discussing, and presenting, were improved during three meetings and sharply developed in general. In addition, the students' spoken activities that engaged some groups were considered good. Besides, there was a linear and positive interconnectedness between tutors' activity and their groups' activities.

Key Words: math learning, peer-tutoring, students' spoken activities, tutor's activities, tutees activities, responses

INTRODUCTION

Learning essentially constitutes a set of structured activities and interactions engaging teachers, learners, and surrounding environment (as the learning resource) in search of reaching out the goals. To develop those supposedly aforementioned interactions, the role of teachers is necessary, for instance in selecting the best strategy, method, media, and resources that will be formulated during the learning activities. Isjoni (2010) states

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that all kinds of learning models can be considered as good provided that they are meeting these following criteria: 1) the less efforts and time allotments significantly affect students in learning; 2) the models are to meet the students' way of learning; and 3) the teachers are to be able to implement the selected models properly. In addition, the students' activeness signifies one out of major principles within the learning activities. Learning is to practice, which means that there is no learning without practicing any activities. Students' experiences in learning can be established through implementing active interactions with their surroundings. In fact, knowledge, skills, and attitudes cannot be transferred unconditionally, but the students themselves who are to manage them initiatively. Teachers indeed facilitate and serve the learning resources, but it is the students themselves who are to manage and comprehend the resources based on their capabilities, passions, motivations, talents, and backgrounds. This infers that the students' learning activities are allowed to be set as standardized indicators of quality learning. One of students' learning activities is referred to spoken activity constituting the students' activities in revealing the facts or principles, interconnecting the occurrences, directing the question, advising, expressing the idea, interviewing, discussing, and interrupting (Hanafiah & Suhana, 2010).

Spoken activities signify the combination of two crucial activities in the learning process through scientific approach by means of observing, questioning, experimenting, associating, and communicating. Moreover, directing questions in relation to the un-comprehendible occurrences that have been observed previously is aimed to gain additional information related to what has been and is being observed. Questioning is beneficial in search of establishing the students' factual, conceptual, and procedural comprehensions so as to build the students' meta-cognitive thinking which naturally can be reached through discussions, group-works, and class discussions. Meanwhile, to communicate is the way of expressing the conceptualized results in the spoken and written forms, figures or sketches, diagrams or even graphics after conducting presentation, composing report, and/or work modeling. In essence, spoken activities are initiated from an observation on particular objects, not based on contemplation, which are intentionally aimed to express ideas to others. Spoken activities are a set of activities that are always executed by the students during learning process in addition to seven other activities comprising visual, writing, listening, drawing, moving, mental, and emotional activities (Sardiman, 2011).

Alluding to the observation and the writer's experience at schools; either elementary school, high school, or university levels, students' competencies in questioning the blurred concepts during the learning process and in communicating the ideas in the discussion process need to be teachers' serious concerns. In general, students are not willing to question teachers when the learning activity is running due to their fear and shyness. Therefore, teachers should be selective in choosing the most applicable learning method that develops students' motivation and questioning skill. Consequently, peer-tutoring is the recommended one. By nature, peer-tutoring constitutes a group of students who have accomplished the learning resources and assist their friends who get problems in comprehending what to learn (Suherman, 2003). Peer-tutoring learning signifies the activities that enable students who have mastered all of materials to help

their peers in dealing with difficulties. This method has various advantages, namely: 1) the language formulated by the peers is more of modesty and comprehension than that of teachers'; 2) the learning activities are calm, not stressful; 3) for those who are afraid of their teachers, they can easily question their peer tutor (Rusman, 2011).

A number of researchers reviewing the method of peer-tutoring, for instance; Arjanggi and Suprihatin (2010), have observed students based on their self-regulation. Alwi (2009) states there are significant influences on the senior high school students' motivation and achievement in learning Math after implementing peer-tutoring method. Hafizah (2012) and Soraya (2014) claim that the aforementioned method can develop the elementary school students' achievement in learning. The similar thing was also researched by Nurmala, et.al. (2016) by revealing that peer-tutoring can improve the elementary school students' achievement, attitude, and passion on the material about integrated arithmetic operation. Hayati (2015) analyzes peer-tutoring by emphasizing on the teachers, tutors, and students' activities as well as the students' achievement in learning. In general, peer-tutoring brings about positive behavioral and social impacts (Ginsburg-Block et.al, 2006; Dennis et.al, 2007; Miller et.al, 2010) as well as cognitive and academic impacts (Greenwood & Delquadri, 1995; Scruggs et.al, 2012; Kunsch et.al, 2007). The focus of this study relied more on the elementary school students' spoken activities in the learning process by means of peer-tutoring covering tutoring activities and student members of group.

The learning concept of peer-tutoring is based on the socially constructivist point of view that concerns on achieving the success in learning in terms of sharpening students' role through social interaction that engages teachers and students within their proximal zones (Vygotsky, 1978). Vygotsky postulates that learning can be initiated through social negotiation in the cultural context assisted by the language as the main tool. Students' access is gained through tutors who are contributing to facilitate the teaching activity; while the purpose of learning activities is to realistically and practically overcome problems in authentic settings. For peer-tutoring, this setting refers to the realistic setting of humankind, so that students are to be involved in 'on the job' activity instead of following didactic explanations on abstract concepts. The argument is that students are able to approach unfamiliar problems and provide the exact solutions based on their particular culture. Peer-tutoring concept is in line with the aspects of social constructivist theory. It is developing social negotiation between tutors and their peers in which the knowledge construction is achieved through communication and dialogue in groups.

By nature, the fact is in line with Zaini's point of view (2002) arguing that the most effective learning method is by teaching others. Learning resources can be retrieved from other people excluding teachers, namely: the higher graders, classmates, or the collegial families at home. Learning resources, not teachers, coming from others who are more competent are identically addressed as tutors. In fact, there are two kinds of tutors; they are peer-tutors and elder-tutors. Peer-tutors are those who are in the same age and whose competencies are higher; while elder-tutors signify those tutors whose

grades are higher. Therefore, peer-tutoring model chosen by teachers as the learning strategy is helpful in search of facilitating students to teach materials to their peers.

Peer-tutoring activity is also expected to provide tutors with valuable experiences, by means of "learning by teaching" (Clarkson & Luca, 2002). Hartman (1990) argues that peer-tutoring increases students' motivation in learning. This finding is also underpinned by Whitman (1982), Annis (1983) and Benware - Deci (1984) stating that peer-tutoring can be the most intellectual moment the students have along their careers and is able to lift up their confidence to perform better in term of high-scaled conceptual apprehension than those who only read the materials for study purpose. Goodlad (1999) denotes that the benefits of peer-tutors can be reflected from the students who are taught, the students who teach (the tutors), and the teachers, as follows: a) the taught students are facilitated to find out their interesting, understandable, and supportive learning processes; b) the student-tutors could train their capacities in communication, are encouraged to organize something advantageous to their knowledge, are able to identify others based on their distinguished backgrounds, should gain the new knowledge about how the students are seeing the learning materials, are able to develop their confidence, and are trained to strengthen their knowledge; c) teachers possibly find out the easiest way of teaching materials, create interesting learning activities, and are able to identify students' readiness in learning deeply. Peer-tutoring in learning activities is expected to grow up teamwork and solidarity, increase the capability of tutors or either tutored-students, build up the tutors' pride, create a good example for other students, and give an intensive advisory to the slow-learners individually.

Implementing peer-tutoring program is not that simple since there must be so many problems that continually emerge. Sani (2013) states that the procedures of peer-tutoring method in the learning activities should include:

a. Teachers are to divide students into some groups. Every single group consists of three to four students whose capabilities are heterogeneous. In addition, one group must have one student with the intelligent competence for being selected as the tutor;

b. Teachers are to explain the ways of solving some tasks through conducting group-learning assisted by peer-tutors, to clarify the duty of each group, and to explain the assessment of affective tasks;

c. Teachers are to explain the materials to all students and give them a chance to directly ask questions if they do not understand;

d. Teachers are to administer the tasks and pre-requisitely command the students to ask for help, in the form of advisory, from their selected peer-tutors.

e. Teachers are to observe students' learning activities and assess them;

f. Teachers, tutors, and students are to evaluate the learning process to deeply follow up the coming activities in the next cycle.

Alluding to the aforementioned procedures, teachers are to initiatively identify some students who have the highly better competencies than others for being projected as

tutors, to prepare them by giving a view about tutoring, and to formulate their duties and clear purposes in effort to successfully reach out the purposes of learning activities.

Objective of the study

This study aimed to describe the elementary school students' spoken activities and their responses within the learning process of Math through peer-tutoring method

METHOD

Design and Approach

To be able to arrive at the goals of the study, descriptive qualitative design with qualitative approach was accommodated (Lambert and Lambert, 2012; Starman, 2013). This current study was conducted to fifth-graders of First State Elementary School of Kunjang, Kediri, East Java, focusing on students' spoken activities and responses. In other words, this study was also seen as a case study (Thomas, 2011; Starman, 2013). This is applicable for educational fields (Merriam, 1988).

Subjects

This study recruited 24 fifth-graders, comprising 13 female students and 11 male students, and also the fifth-grade teacher of First State Elementary School of Kunjang, Kediri, East Java, Indonesia. The recruited teacher had already implemented peer-tutoring in academic year 2015-2016. The students were divided into four major groups in which one group must have one student as the tutor recommended by the teacher. The selection of the tutor was based upon students' achievement, which was shown to be better among peers within groups. The tutors, before conducting the instructional activities, were equipped with necessary explanations about their job descriptions.

Data Collection

The main data of this study were the students' activities and their responses, mainly in the form of spoken activities during the learning process by peer-tutoring method involving both tutors and tutees. The data related to students' spoken activities were collected through observation, field notes, and closed-questionnaires. The data related to students' responses were collected through interview. Observation and field noting were conducted by two observers within three meetings that discussed the material under the theme "Using Prime Factor to Determine the Least Common Multiple (LCM), Greatest Common Divisor (GCD), and Arithmetically Operating the Mixed-Integer." Closed-questionnaires were given at the end of each lesson. In addition, the interview was administered in every single end of meeting to all tutors and randomly to several members of each group.

Data Analysis

The data of students' spoken activities were analyzed by coding the results of observation and field notes from two observers in each meeting. Data credibility has shown – the results of observation and field notes from the two observers were 95% similar (Baiduri, 2015). The next stage was method triangulation to reach the credible

data from observation/field notes and the credible questionnaire data (Sugiyono, 2007), which were then descriptively analyzed, by calculating the percentages of each student's spoken activity in each meeting (Lambert & Lambert, 2012). The results were categorized from the poor criterion up to the excellent criterion (Department of National Education, 2002). Meanwhile, the data from the interview were taken from time and source triangulations, by noticing the consistency and similarity of answers/responses of students along different times (Sugiyono, 2007). Those data were then analyzed through interactive models covering data reduction, data exposing, and summation (Miles & Huberman, 1992; Sugiyono, 2007) cited by Baiduri (2014).

FINDINGS AND DISCUSSION

Tutors' Spoken Activities and their Responses

The tutors' spoken activities included questioning to the teachers, members of group, or other groups, answering the teacher's and other students' questions, group discussion, explaining the materials to the members of group (tutees), and communicating the result of the group discussion into the classroom. The tutors' activities were analyzed based on their groups; and the activities executed by the students were tabulated into Table 1 and Figure 1.

Table 1
Tutors' Activities of Each Group

Group(s)	*Implementation*			*Average(s)*	*Category*
	M1	M2	M3		
I	100%	100%	100%	100.00%	Excellent
II	100%	100%	100%	100.00%	Excellent
III	60%	80%	100%	80.00%	Good
IV	40%	80%	80%	66.67%	Fair
Average(s)	75%	90%	95%	86.67%	Excellent

Notes:

M1 : Meeting 1

M2 : Meeting 2

M3 : Meeting 3

Shown in Table 1, there was a significant development of spoken activities conducted by each tutor when attentively focusing on every single meeting, particularly in group II and IV. The tutors' activities in group III were fairly developed accounted for 60% (fair) in meeting 1, heading to 80% (good) in meeting 2, and finally reaching out 100% (excellent) in meeting 3. The tutors' activities in group IV significantly increased from 40% (very poor) in meeting 1, reaching 80% (good) in meeting 2 and 3. Besides, the average of tutors' activities in meeting 1 to 3 had been sharply upgraded going from good criterion in meeting 1 (accounted for 75%), reaching excellent criterion (accounted for 95%) in meeting 3. However, apart from those findings, the tutors' activities in group IV were still considered as fair.

The analysis on every single activity of tutors is communicated on Figure 1.

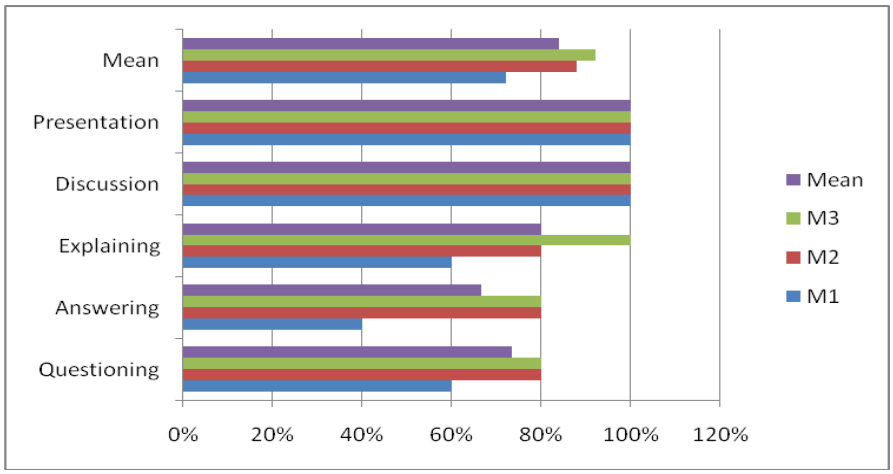

Figure 1 Tutors' Spoken Activities

The results communicated in Figure 1 exhibited the increase of questioning activity accumulating for 60% (fair) in meeting 1, reaching 80% (good) in meeting 2 and 3. The average of questioning activity taken from three meetings, accounted for 73.33%, was considered good. Further, the answering activity significantly developed from 40% (very poor) in meeting 1, heading to 80% (good) in meeting 2 and 3, by averagely showing 66.67%, meeting the fair category. Meanwhile, the explaining activity was upgraded from 60% (fair) in meeting 1, heading to 80% (good) in meeting 2, and achieving 100% (excellent) in meeting 3, by the total-average of 80% (good). In general, there was a significant increase in every single meeting going from 72% (good) in meeting 1, heading to 88% (excellent) in meeting 2, and reaching out 92% (excellent) in meeting 3.

Furthermore, in accordance with the results of the interviews administered to the tutors, it could be summed up that all tutors were proud of themselves for helping out the other students who got problems. This is in line with ZB's statement as follow:

> *"I am feeling happy since my friends are allowed to freely ask for comprehension on the complicated concepts they have not understood."*

Meanwhile, RAF stated:

> *"I am pretty excited because I can share my knowledge, work together, and push myself to study more diligently."*

In addition, the tutors had performed their responsibilities, such as helping, directing, and explaining to those who were still feeling confused in understanding the materials. It is in line with following MC's statement:

> *"Tutors' main duty is to help others who still get confused and to explain the materials. Satisfactorily, I have done my job."*

Apart from their pride of being able to share their knowledge and to try hard doing their best, the tutors occasionally dealt with various obstacles, for instance: when they were explaining the materials to their tutees, the tutees tended to ignore the explanation and to be busy with their own worlds so that there were only few students who could understand the materials well. This phenomenon was excerpted in ZB's comment:

> *"When I gave my friends help by explaining to my members, there were some students who failed to comprehend since they were busy with themselves."*

These difficulties encouraged the tutors to train their communicative skills, to require them for being able to identify others based on their social backgrounds, to acquire the other students' perception on seeing the subject matter, and to upgrade their knowledge to help other students (Goodlad, 1999; Topping, 1996; Rohrbeck et. al, 2003). This denotes that tutors have gained their learning through teaching (Clarkson & Luca, 2002). When tutors are providing other students with helps in comprehending particular concepts, they are to be able to strengthen their understandings on those concepts as well (Roscoe & Chi, 2007; Depaz & Moni, 2008; Scruggs et.al, 2012).

Alluding to aforementioned elaboration on the tutors' spoken activities, those selected as tutors did not only possess higher cognitive scores than those who were not, but they also possessed the unavoidable patience in guiding other students. However, by nature, learning activities assisted by peer-tutors would not deny the teacher's role as the main facilitator. When the tutors were dealing with some difficulties in performing their responsibilities, the teacher performed the responsibility of helping the tutors upon or without request. In fact, the process of preparing the capable tutors by the teachers constituted the most crucial stage during the learning activities implementing peer-tutoring method.

Tutees' Spoken Activities and their Responses

In accordance with the tutors' spoken activities, the tutees' activities constituting the main concern in this study included: directing some questions to the teacher, the tutors, and other members or other groups; joining group-discussion; and presenting the discussion results. The groups' presentation activities were not analyzed deeply since those activities were executed by the groups' representatives as the Table 2 communicates.

Table 2
Groups' Spoken Activities

Activities	*Percentage of Implementation*												AV
	M1				M2				M3				
	I	II	III	IV	I	II	III	IV	I	II	III	IV	
Questioning	40%	50%	60%	50%	60%	100%	80%	50%	80%	100%	80%	67%	67%
Answering	70%	63%	50%	50%	80%	88%	70%	42%	90%	88%	70%	75%	68%
Discussion	40%	75%	60%	50%	80%	75%	80%	67%	100%	100%	100%	67%	73%
AV	55%	63%	55%	50%	75%	88%	75%	50%	90%	94%	80%	71%	78%

Notes:

M1 : Meeting 1

M2 : Meeting 2

M3 : Meeting 3

I - IV : Group 1 to 4

AV : Average(s)

Shown in Table 2, there was an increase of every single activity of each group. The questioning activity of group I developed from 40% (very poor) in meeting 1, heading to 60% (fair) in meeting 2, and reaching 80% (good) in meeting 3. Meanwhile, the questioning activity of group II increased significantly from 50% (poor) in meeting 1, reaching 100% (excellent) in meeting 2 and 3. Besides, the questioning activity of group III increased from 60% (fair) in meeting 1, reaching 80% (good) in meeting 2 and 3. At last, the questioning activity of group IV grew up from 50% (poor) in meeting 1 and 2 and heading to 67% (fair) in meeting 3. Therefore, the general average of students' questioning activities was 67% showing fair category.

Furthermore, the answering activity of group I increased from 70% (good) in meeting 1, heading respectively to 80% (good) and 90% (excellent) in meeting 2 and 3. In addition, the answering activity of group II increased from 60% (fair) in meeting 1, heading to 88% (good) in meeting 2 and 3. Further, the answering activity of group III grew up from 50% (poor) in meeting 1 to 70% (good) in meeting 2 and 3. However, the questioning activity of group IV went down from 50% (poor) in meeting 1 to 42% (very poor) in meeting 2, and arising back to 75% (good) in meeting 3. Therefore, the cumulative average of students' answering activities was 68% denoting fair category.

Moving to the discussion activity, group I exhibited the development going from 40% (very poor) in meeting 1, correspondingly heading to 80% (good) and 100% (excellent) in meeting 2 and 3. Whereas, the discussion activity of group II increased from 75% (good) in meeting 1 and 2, heading to 100% (excellent) in meeting 3. In addition, the discussion activity in group III developed starting from 60% (fair) in meeting 1, heading to 80% (good) in meeting 2, and reaching 100% (excellent) in meeting 3. Lastly, the discussion activity of group IV increased from 50% (poor) in meeting 1, heading to 67% (fair) in meeting 2 and 3. To sum up, the total average of students' discussion activities was accounted for 73% and considered as good.

In general, all activities of group I increased from 55% (poor) in meeting 1, heading to 75% (good) in meeting 2, and reaching out 90% (excellent) in meeting 3. On the other hands, the activities of group II significantly increased from 63% (fair) in meeting 1, going to 88% (excellent) in meeting 2, and heading to 94% (excellent) in meeting 3. Meanwhile, the activities of group III developed from 55% (poor) in meeting 1, going to 75% (good) in meeting 2, and heading to 80% in meeting 3. At last, the activities of group IV went up starting from 50% (poor) in meeting 1 and 2, heading to 71% (good) in meeting 3.

These findings conveyed that there was a development in terms of students' activeness during the learning process. These were in line with Topping (1996) who claims that the main pedagogical advantage of peer-tutoring method is to activate the students to more actively and interactively participate upon learning. Besides, peer-tutoring is also projected to motivate students in learning (Whitman, 1982; Annis, 1983; Benware & Deci, 1984; Hartman, 1990). In fact, if we guide ourselves to notice the tutors' activities in assisting their peers, there must be a positive relationship established engaging both the tutors and the tutees.

The interviews conducted to tap the tutees' responses exhibited some facts related to the conduct of peer-tutoring. One out of which was to accomplish the tasks assigned by the teacher assisted by tutors, as what was communicated through the following extracted interview with PAN:

> *"Certainly, it must be the responsibility and duty of the members of group."*

Besides, the learning activities through peer-tutoring encouraged the students (16 out of 20) to actively question their tutors, different from what they did when they were learning directly from their teacher. Factually, they were not willing to question their teacher due to their fear and shyness. This fact was proved by the following extracted interview with ABR:

> *"Yeah, I can bravely ask my tutor because I do not feel shy. But, I am not willing to ask my teacher because I am afraid and shy."*

This fact conveyed that the learning activities by peer-tutoring initiated the students' responsibilities and bravery of expressing their ideas. In addition, this manifested a number of benefits for students to learn by means of implementing peer-tutoring method which were minimizing the students' anxiety, arousing the students' open-mindedness, and growing up the sense of belonging amongst the students during the learning activities (Topping, 1996; Clarkson & Luca, 2002; Rohrbeck et. al, 2003). Moreover, in search of fully comprehending the materials, the students enjoyed their learning without having serious anxiety. They also ensured themselves to keep being curious and to respect others through working in teams. This was in line with the questionnaire results of 16 students who admitted that they felt easier to apprehend the materials since they were not shy to ask their tutors. 17 other students expressed that they found it easier to understand the concepts of materials so that they were able to satisfactorily complete the tasks assigned by the teacher. This has indicated that not only does peer-tutoring guarantee effective and efficient communication and cooperation, but it helps develop team-work and social spirits as well (Fuchs et.al, 2000; Ginsburg-Block et.al, 2006).

CONCLUSION

Learning constitutes the conscious process that is navigated by people in search of developing their innate potentials. Learning with self-driven responsibility by having no pressure is pre-requisite to well comprehend what is being learnt. Therefore, peer-tutoring constitutes one of alternative methods that is to be accommodated by teachers for arousing students' responsibility and teamwork skill as well as for decreasing the

learning anxiety among students (Topping, 1996). To support the effective implementation of peer-tutoring, teachers are to make a perfect preparation on some aspects comprising: to select and to train their tutors, to define their tutors' responsibilities clearly, and to formulate the materials and tasks that will be assigned to their students (Clarkson & Luca, 2002).

Based on the results of data analysis, peer-tutoring has developed the students' and their groups' spoken activities which were manifested in their bravery to directly question and to actively participate in group discussion on "Using Prime Factor to Determine the Least Common Multiple (LCM), Greatest Common Divisor (GCD), and Arithmetically Operating the Mixed-Integer." In addition, the spoken activities of the groups' members were influenced by their tutors' activities. In essence, this method was appropriate to develop students' spoken activities, mainly in training their questioning skill. Factually, this study was limited to the elementary school students' spoken activities and has not covered other learning activities. Therefore, further studies on the analysis of other elements related to the process and result of Math learning activities by peer-tutoring are widely open.

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REFERENCES

Alwi, M. (2009). Pengaruh metode tutor sebaya terhadap motivasi dan prestasi belajar matematika siswa SMA. Tesis Fakultas Psikologi, UGM (*The Effects of Peer-Tutoring Method towards Motivation and Achievement of Senior High School Students on Math Subject). Thesis, Faculty of Psychology UGM, Yogyakarta*).

Annis, L. F. (1983). The processes and effects of peer tutoring. *Human Learning, 10*(1), 39-47.

Arjanggi, R dan Suprihatin, T. (2010). Metode Pembelajaran Tutor Teman Sebaya Meningkatkan Hasil Belajar Berdasar Regulasi-Diri. (*Peer-Tutoring Instructional Method to Improve Students' Achievement based on Self Regulation*). *Makara, Sosial Humaniora, 14*(2), 91-97

Baiduri, (2014). A Relational Thinking Process of Elementery School Students with High Capability. *Journal of Educational and Developmental Psychology, 4*(2), 24-34. doi:10.5539/jedp.v4n2p24

Baiduri, (2015). Mathematics Education Students' Understanding of Equal Sign and Equivalent Equation, *Asian Social Science, 11*(25),15-24. doi:10.5539/ass.v11n25p15.

Benware, C. A., & Deci, E. L. (1984). Quality of learning with an active versus passive motivational set. *American Educational Research Journal, 21*(4), 755-765.

Clarkson, B. & Luca, J. (2002). Promoting Student Learning through Peer Tutoring – A Case Study. In P. Barker & S. Rebelsky (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2002* (1176-1181).

Dennis, L.M., Canas, M and Ortega, M.M. (2007). Effects of team competition versus team cooperation in classwide peer tutoring, *The Journal of Educational Research*, *100*, 155-160.

Depaz, I., & Moni, R.W. (2008). Using peer teaching to support co-operative learning in undergraduate pharmacologi. *Bioscience Education Journal, 11,* 98-108.

Depdiknas. (2002). *Pedoman Khusus Pengembangan Silabus dan Penilaian*. (*Specific Guidance for Syllabus and Assessment*). Direktorat Pendidikan Menengah Dirjen Dikdasmen, Jakarta. (*Directorate of Higher Education*).

Fuchs, D., Fuchs, L.S., and Burish, P. (2000). Peer-assisted learning strategies: An evidence-based practice to promote reading achievement. *Learning Disabilities Research & Practice. 15,* 85-91.

Ginsburg-Block, M.D., C.A. Rohrbeck, and J.W. Fantuzzo. (2006). A meta-analytic review of social, self-concept, and behavioral outcomes of peer-assisted learning. *Journal of Educational Psychology*, *98*, 732-749.

Goodlad, S. (1999). *Never Knowingly Oversold: a watchword for tutoring and mentoring schemes?* Paper presented at the 2nd BP Regional Conference on Tutoring and Mentoring, Perth, Western Australia.

Greenwood, C.R. and Delquadri, J. (1995). Classwide peer tutoring and the prevention of school failure. *Preventing School Failure: Alternative Education for Children and Youth, 39*, 21-25.

Hafizah, dkk. (2012) *Pengaruh Model Tutor Sebaya Terhadap Hasil Belajar Di kelas V SD Kota Pontianak* (*The Effects of Peer-Tutoring towards Students' Achievement in Grade V Elementary Schools in Potianak City*). http://jurnaluntan.ac.id/indexphp/jpdpb/article/viewfile/1047/pdf).

Hanafiah, Nanang & Suhana, Cucu. (2010). *Konsep Strategi Pembelajaran* (*The Concepts of Instructional Strategies*). Refika Aditama, Bandung.

Hartman, G. (1990). Peer learning and support via audio-teleconferencing in continuing education for nurses. *Distance Education, 11*(2), 308-319.

Hayati, Yulia Lisa Sari (2015). Analisis Penerapan Model Pembelajaran Tutor Sebaya Dalam Pembelajaran Matematika Kelas V di SDN Kunjang 1 Kecamatan Kunjang Kabupaten Kediri, *skripsi*, Program Studi Pendidikan Guru Sekolah Dasar Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Malang, tidak dipublikasikan. (*The Analysis on the Implementation of Peer-Tutoring Instructional Model in Mathematics Class Grade V State Elementary School Kunjang 1, Kunjang District, Kediri Regency, Thesis, Elementary School Teacher Education Department, Faculty of Teacher Training and Education, University of Muhammadiyah Malang, Unpublished*).

Isjoni. (2010). *Pembelajaran kooperatif* (*Cooperative Learning*). Yogyakarta: Pustaka Pelajar.

Kemdikbud. (2013). *Pendekatan scientific (Ilmiah) dalam Pembelajaran* (*Scientific Approaches in Instructional Activities)*. Pusbangprodik, Jakarta.

Kunsch, C.A., Jitendra, A.K. & Sood, S. (2007). The effects of peer-mediated instruction in mathematics for students with learning problems: A research synthesis. *Learning Disabilities Research & Practice, 22,* 1-12.

Lambert, V.A., & Lambert, C.E. 2012. Qualitative Descriptive Research: An Acceptable Design. *Pacific Rim Int J Nurs Res, 16(4),* 255-256.

Merriam. (1988). *Case study research in education: A Qualitative approach*. Michigan: Jossey-Bass.

Miller, D., Topping, K., & Thurston, A. (2010). Peer tutoring in reading: The effects of role and organization on two dimensions of self-esteem. *British Journal of Educational Psychology, 80,* 417-433.

Miles, M. B. & Huberman, A.M. (1992). *Analisis Data Kualitatif: Buku Sumber Tentang Metode-metode Baru*. Terjemahan oleh: Tjetjep Rohendi Rohedi (*Qualitative Data Analysis: Resource Book on Current Methods. Translated by: Tjetjep Rohendi Rohedi*). UI Press, Jakarta.

Nurmala, Sukayasa, & Baharuddin Paloloang. (2016). Penerapan Model Pembelajaran Tutor Sebaya Untuk Meningkatkan Hasil Belajar Siswa Kelas V SDN 20 Toli-Toli Pada Operasi Hitung Campuran Bilangan Bulat. (*The Implementation of Peer-Tutoring Instructional Method to Improve Students' Achievement Grade V State Elementary School 20 Toli-Toli for Integer Number Operation*). *Jurnal Kreatif Tadulako Online, 4*(9), 199-211.

Roscoe, R.D., & Chi, M.T.H. (2007). Understanding tutor learning: Knowledge building and knowledgetelling in peer tutors' explaination and questions. *Review of Education Research, 77 (4),* 534-574.

Rohrbeck, C.A. et al. (2003). Peer-assisted learning interventions with elementary school students: a meta-analytic review. *Journal of Educational Psychology, 95*(2), 240-257.

Rusman. (2011). *Model-Model Pembelajaran* (*Instructional Models*), PT. Rajagrafindo Persada. Jakarta.

Sani, Ridwan Abdullah. (2013). *Inovasi Pembelajaran* (*Instructional Innovation*). PT. Bumi Aksara. Jakarta.

Sardiman, A.M. (2011). Interaksi dan Motivasi Belajar Mengajar (*Interaction and Motivation in Teaching and Learning*). PT Raja Grafindo. Jakarta.

Soraya, Ade Lenggogeni. (2014). *Pembelajaran Tutor Sebaya Sebagai Upaya Untuk Meningkatkan Hasil Belajar Matematika Di Sekolah Dasar* (*Peer-Tutoring Instructional Model in Effort to Improve Students' Achievement in Math Subject in Elementary Schools*). (http://adesorayalenggogeni.wordpress.com/ 2014/0/19/pembelajaran-tutor-sebaya-sebagai-upaya-untuk-meningkatkan-hasil-belajar-matematika-di-sekolah-dasar/).

Sugiyono. (2007). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif dan R&D* (*Educational Research Methods: Quantitative, Qualitative, and R&D*). Alfabeta, Bandung.

Scruggs, T.E., M.A. Mastropieri, and L. Marshak. (2012).Peer-mediated instruction in inclusive secondary social studies learning: Direct and indirect learning effects. *Learning Disabilities Research & Practice*, *27*, 12-20.

Starman, A. B. 2013. The case study as a type of qualitative research. *Journal Of Contemporary Educational Studies*, *1*, 28-43.

Suherman, E. (2003). *Strategi Pembelajaran Matematika Kontemporer* (*Contemporary Mathematics Learning Strategies*). UPI. Bandung.

Thomas, G. (2011). A Typology for the case study in social science following a review of definition, discourse and structure. *Qualitative Inquiry*, *17*(6), 511-521.

Tim MKPBBN Jurusan Pendidikan Matematika. (2001). *Strategi Pembelajaran Matematika Kontemporer* (*Contemporary Mathematics Learning Strategies*), JICA-UPI.Bandung.

Topping, K. J. (1996). The effectiveness of peer tutoring in further and higher education: A typology and review of the literature. *Higher Education, 32*, 321-345.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Whitman, N. A. (1982). *Peer teaching: to teach is to learn twice*. Washington DC: ERIC Clearninghouse on Higher Education.

Zaini, Hisyam, dkk. (2002). *Strategi pembelajaran aktif* (*Active Instructional Strategies*). CTSD. Yogyakarta.

Turkish Abstract

İlkokul Öğrencilerinin Öğretici Akranla Konuşma Etkinlikleri ve Matematik Öğrenmelerine Etkileri

Öğrenme sürecindeki öğrenci etkinlikleri öğrenme sürecinin niteliğini belirlediğinden çok önemlidir. Bunlardan biri de konuşma etkinliğidir. Bu çalışma ilkokul öğrencilerinin öğretici akranla konuşma etkinliklerini ve bu etkinliklerin onların matematik öğrenme sürecine olan etkilerini araştırmayı amaçlamaktadır. Araştırma durum çalışması ve nitel yaklaşım yoluyla betimsel nitel dizayn olarak desenlenmiştir. Bunlara ilave olarak gözlem, saha notları, görüşme ve Doğu Java Endonezya, Kunjang, Kediri şehrindeki 24 ilkokul 5. sınıf öğrencisine uygulanan anketlerden elde edilen veriler toplanmıştır. Dizayn 4 öğrencinin öğretici akran olarak görevlendirildiği, geri kalanın 4alt gruba ayrıldığı şekilde yapılmıştır. Bulgular, öğretici akranların sorgulama, cevaplama, açıklama, tartışma ve sunumdan oluşan konuşma etkinlikleri becerilerini yapılan 3 oturum boyunca geliştiğini göstermiştir. Buna ilave olarak, öğrencilerin konuşma etkinlikleri bazı gruplarda iyi olarak belirlenmiştir.

Anahtar Kelimeler: matematik öğrenme, akran-öğreticiliği, öğrencilerin konuşma etkinlikleri, öğretici etkinlikleri, öğrenen etkinlikleri, cevaplar

French Abstract
Étudiants d'École primaire Activités Parlées et leurs Réponses dans Maths Apprenant par Tutorat de pair

Les activités des Étudiants dans le processus d'apprentissage sont très importantes d'indiquer la qualité de processus apprenant. On parle dont un l'activité. Cette étude a été destinée pour analyser les étudiants d'école primaire des activités parlées et leurs réponses dans la jonction de Maths apprenant le processus par le tutorat de pair. Le design(la conception) qualitatif descriptif a été piloté au moyen de la mise en œuvre de l'approche qualitative et de l'étude de cas. Plus loin(De plus), les données ont été rassemblées de l'observation, la note(le billet) de terrain(des champs), l'entretien(interview) et le questionnaire qui a été administré à 24 élèves de CM2 de Première École primaire D'état de Kunjang, Kediri, l'Est de Java l'Indonésie. Le design(La conception) était ces quatre étudiants ont été recruté comme les professeurs privés; tandis que le reste a été subdivisé dans quatre groupes différents. Les découvertes exposées que la couverture d'activités parlée des professeurs privés : l'interrogation, la réponse, l'explication, la discussion et la présentation, ont été améliorés pendant trois réunions et développés brusquement en général. De plus, on a considéré les activités parlées des étudiants qui ont engagé quelques groupes bon.

Mots Clés: apprentissage de maths, tutorat de pair, les activités parlées d'étudiants, les activités de professeur privé, tutees activités, réponses

Arabic Abstract
أنشطة المنطوقة لطلاب المدارس الابتدائية 'والردود في الرياضيات التعلم عن طريق الند الإرشاد

أنشطة الطلاب في عملية التعلم مهمة جدا للدلالة على جودة العملية التعليمية. واحدة من التي يتحدث النشاط. وكان الغرض من هذه الدراسة لتحليل أنشطة المنطوقة لطلاب المدارس الابتدائية، والردود عليها في الانضمام عملية التعلم الرياضيات التي كتبها نظير الدروس الخصوصية. وقد تم تجريب التصميم النوعي وصفي عن طريق تنفيذ دراسة النهج وحالة النوعية. وعلاوة على ذلك، تم جمع البيانات من المراقبة والملاحظة الميدانية، والمقابلة، والاستبيان التي كانت تدار إلى 24 طلاب الصف الخامس من مدرسة فيرست ستيت الابتدائية منKunjang ، كديري اندونيسيا. كان التصميم الذي أربعة طلاب تم تعيين باسم المعلمين. في حين تم تقسيم بقية إلى أربع مجموعات مختلفة. أظهرت النتائج أن أنشطة المنطوقة الاولياء "تغطي: استجواب، والإجابة، وشرح ومناقشة، وتقديم، وتحسين خلال ثلاث جلسات وضعت بشكل حاد في العام. وبالإضافة إلى ذلك، اعتبرت أنشطة الطلاب المنطوقة التي تعمل بعض الجماعات جيدة.

كلمات البحث: تعلم الرياضيات، نظير الدروس الخصوصية، الأنشطة الطلابية المنطوقة، والأنشطة المدرس والأنشطة tutees، والاستجابات

German Abstract
Grundschulstudenten Gesprochene Aktivitäten und ihre Antworten in Mathe Lernen durch Peer-Tutoring

Die Aktivitäten der Studierenden im Lernprozess sind sehr wichtig, um die Qualität des Lernprozesses anzuzeigen. Eines davon ist gesprochene Tätigkeit. Diese Studie beabsichtigte, die gesprochenen Aktivitäten der Grundschüler und ihre Antworten in der Teilnahme an Mathe Lernprozess durch Peer-Tutoring zu analysieren. Weiterhin wurden die Daten aus Beobachtung, Feldnotiz, Interview und Fragebogen gesammelt, die an 24 Fünfte der ersten staatlichen Grundschule von Kunjang, Kediri, Ost-Java Indonesien verwaltet wurden. Das Design war, dass vier Studenten als die Tutoren rekrutiert wurden; Während der Rest in vier verschiedene Gruppen unterteilt wurde. Die Ergebnisse zeigten, dass die gesprochenen Aktivitäten der Tutoren, die: Befragung, Beantwortung, Erklärung, Diskussion und Präsentation, in drei Sitzungen verbessert

und im Allgemeinen stark entwickelt wurden. Darüber hinaus wurden die gesprochenen Aktivitäten der Schüler, die einige Gruppen engagierten, als gut angesehen.

Schlüsselwörter: mathe lernen, peer-tutoring, studenten gesprochenen aktivitäten, tutor-aktivitäten, tutees aktivitäten, antworten

Malaysian Abstract

Aktiviti Pertuturan Pelajar Sekolah Rendah dan Respons mereka dalam Pembelajaran Matematik oleh tutor Rakan Sebaya

Kegiatan pelajar dalam proses pembelajaran adalah sangat penting untuk menunjukkan kualiti proses pembelajaran. Salah satu alah aktiviti pertuturan. Kajian ini bertujuan untuk menganalisis aktiviti pertuturan pelajar sekolah rendah dan maklum balas mereka untuk menyertai proses pembelajaran Matematik oleh pengajar rakan sebaya. Reka bentuk kualitatif deskriptif telah digunakan dengan reka bentuk kajian kes. Di samping itu, data yang dikumpul daripada pemerhatian, nota lapangan, temu bual dan soal selidik yang telah diberikan kepada 24 penggred ke lima. Pertama Sekolah Rendah Negeri Kunjang, Kediri, Jawa Timur Indonesia. Empat pelajar telah diambil sebagai tutor; manakala selebihnya telah dibahagikan kepada empat kumpulan yang berbeza. Penemuan dipamerkan aktiviti diucapkan tutor meliputi: menyoal, menjawab, menjelaskan, membincangkan, dan menyampaikan, telah bertambah baik dalam tiga pertemuan dan peningkatan secara umum. Selain itu, aktiviti bertutur pelajar yang terlibat beberapa kumpulan telah dianggap baik.

Kata Kunci: pembelajaran matematik, tutor rakan sebaya, aktiviti bertutur pelajar, aktiviti tutor, aktiviti *tutees*, jawapan

Russian Abstract

Начальная Школа Студенческая Словесные Деятельность и Их Реакции по Математике Обучения по Пэр-Репетиторство

Деятельность студентов в процессе обучения очень важная для указания качества учебного процесса. Одним из них является устная активность. Это исследование предназначалось для анализа разговорной активности учащихся начальной школы и их реакции при присоединении к математике, элементов пэр-репетиторства. Описательный качественный дизайн был пилотирован посредством - Исполнительного внедрения качественного подхода и тематического исследования. Кроме того, данные были собраны из наблюдений, интервью и вопросника, которые были проведены между 24 первоклассниками, в государственных начальных школах Кунджана, Кедири, Восточная Ява и Индонезия. Исследование состояло в том, что в качестве наставников были набраны четыре студента, а учащиеся были подразделены на четыре различные группы. Исследование показало, что деятельность преподавателей охватывающая тему в виде вопросов, ответов, объяснений, обсуждений и презентаций. При этом заинтересованность учащихся прогрессировала с каждым занятием.

Ключевые Слова: математическое обучение, пэр-репетиторство, студенческая словесные деятельность, деятельность репетитора, реакции